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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/712,336

11/12/2003

Eung Don Lee

2013P123

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8791 7590 05/14/2007
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EXAMINER

CHAWAN, VIJAY B

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

05/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/712,336

Applicant(s)

LEE ET AL.

Examiner

Vijay B. Chawan

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. As per the Interim Guidelines regarding 35 U.S.C 101, claims 1-13 define non-statutory process because the claims merely manipulate an abstract idea (mathematical algorithm) without a claimed limitation to practical application. Also, it is not clear, what type of data is being received and how. If the acts of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter (Benson, 409 US at 71-72, 175, USPQ at 676). Furthermore, claims define non-statutory processes if they simply manipulate abstract ideas (Warmerdam, 33 F.3d at 1360.31 USPQ2d at 1759). Lastly in evaluating claims in view of 35 U.S.C. 101, the "limited to the technological arts" test is no longer valid (see Annex III of the interim Guidelines).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, and 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Nahumi (5,822,724).

As per claim 1, Nahumi teaches a focused search method of a fixed codebook, the method comprising: calculating absolute values of correlation vectors of respective pulse locations of tracks 0, 1, 2, and 3 and arranging the pulse locations in a descending order of the absolute values; and selecting a predetermined number of pulse locations for each track among candidate pulse locations arranged and conducting focused search of the selected result (Col.1, line 55 – Col.6, line 8).

As per claim 2, Nahumi teaches a focused search method of a fixed codebook, the method comprising: calculating absolute values of correlation vectors for respective pulse locations of tracks 0, 1, 2, and 3; arranging the pulse locations according to the absolute values of the correlation vectors in each track of the tracks 0, 1, 2, and 3; selecting candidate pulse locations to be subjected to focused search in each track of the tracks 0, 1, 2, and 3; setting a threshold value in consideration of the selected candidate pulse locations; summing the absolute values of the correlation vectors for each track; determining whether the summed value is greater than the threshold value;

searching for pulse locations of track 3 if the summed value is greater than the threshold value and terminating search if the summed value is equal to or smaller than the threshold value; determining whether all pulse location combinations of the tracks 0, 1, and 2 are completely searched for after search of the track 3 is conducted; and increasing the respective pulse locations of the tracks 0, 1, and 2 by one and feeding back to step of summing the absolute values of the correlation vectors if the all pulse location combinations are not completely searched for (Col.1, line 55 – Col.6, line 8).

As per claim 3, Nahumi teaches the method of claim 2, wherein in arrangement of the pulse locations, the pulse locations are arranged in a descending order according to the absolute values of the correlation vectors (Col.1, line 55 – Col.6, line 8).

As per claim 4, Nahumi teaches the method of claim 2, wherein in selection of the candidate pulse locations, a predetermined number of candidate pulse locations for each track are selected in a descending order of the absolute values of the correlation vectors (Col.1, line 55 – Col.6, line 8).

As per claim 5, Nahumi teaches the method of claim 2, wherein the threshold value is obtained by a function of a maximal correlation value and an average correlation value which are calculated using a predetermined number of pulse locations selected for each track in the tracks 0, 1, and 2 (Col.1, line 55 – Col.6, line 8).

As per claim 9, Nahumi teaches a computer readable medium having embodied thereon a computer program for a focused search method of claim 2 (Col.1, line 55 – Col.6, line 8).

As per claim 10, Nahumi teaches a focused search apparatus of a fixed codebook comprising: an absolute value calculator which calculates absolute values of correlation vectors of respective pulse locations of tracks 0, 1, 2, and 3; a pulse location arrangement unit which arranges pulse locations in each track of the tracks 0, 1, 2, and 3 according to the absolute values of the correlation vectors calculated in the absolute value calculator; a pulse location selector which selects candidate pulse locations to be subjected to focused search in each track of the tracks 0, 1, 2, and 3; a threshold value setting unit which sets a threshold value in consideration of the selected candidate pulse locations; an absolute value summer which sums the absolute values of the correlation vectors of the respective pulse locations of the tracks 0, 1, and 2; a determination unit whether determines whether the summed value is greater than the threshold value; a unit for searching for pulse locations of track 3 if the summed value is greater than the threshold value; and a search completion determination unit which determines whether all pulse location combinations of the tracks 0, 1, and 2 are completely searched for after search of the track 3 is conducted (Col.1, line 55 – Col.6, line 8).

As per claim 11, Nahumi teaches the apparatus of claim 10, wherein the pulse location arrangement unit arranges the absolute values of the correlation vectors in a descending order in each track of the tracks 0, 1, 2, and 3 (Col.1, line 55 – Col.6, line 8).

As per claim 12, Nahumi teaches the apparatus of claim 10, wherein the pulse location selector selects a predetermined number of candidate pulse locations for each

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track in a descending order of the absolute values of the correlation vectors (Col.1, line 55 – Col.6, line 8).

As per claim 13, Nahumi teaches the apparatus of claim 10, wherein the threshold value setting unit sets a threshold value by a function of a maximal correlation value and an average correlation value using a predetermined number of pulse locations selected for each track (Col.1, line 55 – Col.6, line 8).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Benno (6,728,669) teaches relative pulse position in CELP vocoding.

Jung et al., (7,096,181) teach a method for searching codebook.

Gao (6,173,257) teaches a completed fixed codebook for speech encoder.

Yong (5,867,814) teaches a speech coder that utilizes correlation maximization to achieve fast excitation coding, and associated coding method.


Li et al., (US 2003/022576 A1) teach modification of fixed codebook search in G.729

Annex E Audio coding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vijay B. Chawan whose telephone number is (571) 272-7601. The examiner can normally be reached on Monday Through Friday 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Vijay B. Chawan
Primary Examiner
Art Unit 2626

vbc
4/14/07

VIJAY CHAWAN
PRIMARY EXAMINER